USSR

BRYUNO, A. D.

"Movement of a Gyroscope in a Cardan Mounting"

Abstract: The influence of small nutation fluctuations upon the precession
rate of a gyroscope is computed by means of reduction of the equations of
motion to normal form. It is proven that in this case, the normalizing
transform converges. The calculation is carried out for a heavy gyroscope;
the squares and cubes of the amplitude of the nutation fluctuations are
taken into account. An astatic gyroscope and a spherical pendulum are also
dealt with. The first part of the article presents the mathematical ap-
paratus which, in the remaining portion, is used for investigating the
mechanical problems. 1 figure. 13 references.

1/1

USSR

UDC 621.327.53

BRYUNIN, V. N., ONOPKO, D. I., SAVEL'YEV, P. V.

"A Device for Determining the Optimum Parameters of the Elements of Electronic Circuits"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 23, 1970, Author's Certificate No 276523, Filed 23 Nov 68, pp 139-140

Abstract: This author's certificate introduces a device for determining the optimum parameters of the elements of electronic circuits. The device contains a circuit model, a measurement unit, an actuator and a control module. As a distinguishing feature of the patent, speed is increased and testing reliability is improved by adding modules for checking restrictions and the extremum, as well as series connected units for analysis, selection of the extremum direction and organization of motion. The analysis unit is also connected to the control module through the unit for checking restrictions, and to the unit for checking the extremum. The latter unit is connected in turn to the control module.

1/1

USSR

UDC 621.373.42

BRYUSHKOVA, E. A., NEPLYUYEV, L. N.

"Maximum Power from a Tunnel Diode Oscillator"

Moscow, Radiotekhnika, Vol 25, No 9, 1970, pp 33-38

Abstract: This theoretical article is devoted to clarifying the nature of
the change in maximum power in the load of a tunnel diode oscillator and the
optimal load resistance throughout the operating frequency range up to the
critical frequency of the diode. Two basic tunnel diode circuits are con-
sidered in which the load is connected in series and in parallel with the
tuned circuit inductance. The capacitance of the tuned circuit is the p-n
junction capacitance. To simplify the analysis, it is assumed that the
characteristic inductance of the diode is small compared to the tuned-cir-
cuit inductance -- i.e., that the natural resonant frequency of the diode
is much greater than the critical frequency. The analysis is conducted in
the quasi-linear approximation. Expressions are obtained for the maximum
output power and for the optimal load, and it is shown that the condition
for obtaining maximum power in the load is not the same as that for getting
maximum power from the diode p-n junction. It is shown also that the use
of the latter condition in output power computations for frequencies equal
to or greater than half the critical value may lead to substantial errors.
1/1

1/2   014   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--PYRAMIDS OF GROWTH OF THE HEXAGONAL PRISM FACES IN QUARTZ CRYSTALS
 -U-
AUTHOR--BRYZGALOV, A.N., KLESHCHEV, G.V.

COUNTRY OF INFO--USSR

SOURCE--ZAP. VSES. MINERAL. OBSHCHEST. 1970, 99(1), 106-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--QUARTZ, CRYSTAL LATTICE STRUCTURE, ETCHED CRYSTAL, GRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1070   STEP NO--UR/0000/70/099/001/0106/0109

CIRC ACCESSION NO--AP0105930
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0105930

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERNAL STRUCTURE OF QUARTZ
   CRYSTALS WAS STUDIED BY THE HYDROTHERMAL ETCHING METHOD DESCRIBED BY
   SHMID (1965) AND K., ET AL. (1968). NATURAL QUARTZ CRYSTALS HAD WELL
   FORMED FACES OF HEXAGONAL PRISM M. THE HYDROTHERMAL ETCHING OF THIN
   PLATES OF THESE CRYSTALS REVEALED DISTINCTLY THE LAYERS OF GROWTH. THE
   TYPICAL ZONAL STRUCTURE WAS DETECTED: THE LAYERS ARE PARALLEL TO THE
   RHOMBOHEDRAL FACES IN SUSPECTED PYRAMIDS OF GROWTH ON HEXAGONAL PRISM M.
    THE NATURAL CRYSTALS DID NOT GROW ON THE FACES OF PRISM M. THE
   CRYSTALS GREW ALONG THE RHOMBOHEDRAL FACES WITH FORMATION OF FACES M AND
   EXTENSION OF FACES IN TANGENTIAL DIRECTION. THE SYNTHETIC QUARTZ, GROWN
   FROM THE PRIMER LAMINAS OF THE (0001) SECTION, DEVELOPED ALONG THE
   PINACOID FACES. THE PYRAMIDS OF PINACOID GROWTHS WEDGED OUT AND FURTHER
   GROWTHS OF THE CRYSTAL OCCURRED ALONG THE RHOMBOHEDRAL FACES. THE FACES
   OF HEXAGONAL PRISM M WERE PASSIVE AND NO GROWTH ON THEM OCCURRED IN
   NATURAL OR SYNTHETIC CRYSTALS. THEIR FORMATION AND EXTENSION IN
   TANGENTIAL DIRECTION OCCURRED BY THE GROWTH ON FACES OF TRIGONAL PRISMS
   AND RHOMBODEDRONS. BUT THE FACES M CAN PLAY A LARGE ROLE IN FORMATION
   OF SECONDARY ZONING IN CRYSTALS.

UNCLASSIFIED

TITLE--CONDENSATION RESIN -U-

AUTHOR-(05)-NOVOSELTSEV, P.V., BRYZGALOVA, M.A., ZASOVA, V.A.,
   TIKHVINSKAYA, M.YU., ROZHANOVSKAYA, G.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 260,682
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--06JAN70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CONDENSATION TYPE RESIN, CHEMICAL PATENT, PHENOL,
   FORMALDEHYDE, PHENYL ETHER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0242   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0111436
                         UNCLASSIFIED

CIRC ACCESSION NO--AA0111436
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A CONDENSATION RESIN WAS PREPD. BY
   TREATING PH SUB2 O WITH HCHO FOLLOWED BY CONDENSATION POLYMN. WITH PHOH.

USSR   UDC 632.95

BRYZGALOVA, N. I., GAVRILOVA, T. B., GOLOVKIN, G. V., KARAKHANYAN, L. L.

"Soviet Carrier Porochrome-1 for Gas Chromatographic Analysis of Pesticides"

<u>Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov profilakt. zagryaz-
neniya imi produktov pitaniya, kormov i vnesh. sredy</u> (Works of the Second All-
Union Conference on the Investigation of Pesticide Residues and Preventive
Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp
38-43 (from <u>RZh-Khimiya</u>, No 12, Jun 72, Abstract No 12N418)

Translation: It is demonstrated that the Soviet carrier porochrome-1 inocu-
lated with hexamethyldisilazane can replace the foreign carrier chromosorb W
when analyzing pesticides by the gas chromatographic method with an electron
capture detector.

1/1

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USSR   UDC 541.49:546.841'661.733.1

GREBENSHCHIKOVA, V. I., BRYZGALOVA, R. V., and ROGOZIN, Yu. M.

"Thorium Oxalate Complexes"

Moscow, Radiokhimiya, Vol 12, No 2, 1970, pp 279-285

Abstract: This study deals with the determination of the composition and in-stability constants of thorium complexes existing in mixed solutions of nitric and oxalic acids. The method of ligand displacement is used. The use of benzene-2-arsonic acid $\langle$ 1-azo-1 $\rangle$ 2-hydroxynaphthalene-3,6-disulfonic acid (thoron) is recommended. The composition of oxalate complexes of thorium in mixed solutions of nitric and oxalic acids was determined. For ratios of total concentrations of oxalic acid and thorium from 1.5 to 13.0 and $[HNO_3] = 0.12-0.5$ M, thorium is found in solution mainly as the cationic complex of composition $[Th(C_2O_4)]^{2+}$. For a $[H_2C_2O_4]/C_{Th}$ ratio of 13.0-33.0 and the same nitric acid concentration, thorium exists mainly as the neutral complex $[Th(C_2O_4)_2]^0$. It was found that instability constants K of the first and second oxalate complex at $\mu = 0.5$ are, respectively, $2.3 \cdot 10^{-7}$ and $2.7 \cdot 10^{-10}$.

1/1

TITLE--SOLUBILITY OF THORIUM OXALATE IN MIXED SOLUTIONS OF NITRIC AND
    OXALIC ACIDS -U-

AUTHOR-(03)-BRYZGALOVA, R.V., ROGOZIN, YU.M., CHERNITSKAYA, I.V.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(2), 286-91

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NITRIC ACID, OXALATE, SOLUBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0111   STEP NO--UR/0186/70/012/002/0286/0291

CIRC ACCESSION NO--AP0132404
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0132404

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLYS. OF TH(C SUB2 O SUB4) SUB2 .6H SUB2 O (I) IN 0.5-2.5M HNO SUB3, IN A MIXT. OF M HNO SUB3 AND SMALLER THAN OR EQUAL TO 0.5M H SUB2 C SUB2 O SUB4, AND DETD. AT 25 PLUS OR MINUS 0.2DEGREES. EXCESS I WAS STIRRED IN SOLVENT UNTIL EQUIL. WAS ESTABLISHED (1-2 DAYS) AND THEN THE TH CONCN. IN SOLN. WAS DETD. COLORIMETRICALLY. THE SOLY. OF I IN HNO SUB3 INDICATES THAT A CONSIDERABLE AMT. OF TH IN THE SOLNS. IS IN THE FORM OF THE OXALATE COMPLEX OF TH, (TH(C SUB2 O SUB4)) PRIME2 POSITIVE. FROM THE DEPENDENCE OF I SOLY. ON THE CONCN. OF C SUB2 O SUB4 PRIME2 NEGATIVE, THE INSTABILITY CONSTS. FOR THE FOLLOWING OXALATE COMPLEXES OF TH WERE CALCD. AS K SUB(TH(C SUB2 O SUB4)) PRIME2 POSITIVE EQUALS 1.6 TIMES 10 PRIME NEGATIVE9 AND K SUB(TH(C SUB2 O SUB4) SUB2) EQUALS 4.3 TIMES 10 PRIME NEGATIVE16. THE VALUES OF THESE CONSTS. AGREE WELL WITH THOSE FOUND BY THE GROUP DISPLACEMENT METHOD.

TITLE--THORIUM OXALATE COMPLEXES -U-

AUTHOR-(03)-GREBENSHCHIKOVA, V.I., BRYZGALOVA, R.V., ROGOZIN, YU.M.

COUNTRY OF INFO--USSR

SOURCE--RADIO KHIMIYA 1970, 12(2), 279-86

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THORIUM COMPOUND, OXALATE, COMPLEX COMPOUND, LIGAND,
   NAPHTHALENE, SULFONIC ACID, ORGANIC ARSENIC COMPOUND/(U)THORON ARSENIC
   LIGAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1490   STEP NO--UR/0186/70/012/002/0279/0286

CIRC ACCESSION NO--AP0135151
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0135151

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPNS. AND INSTABILITY
CONSTS. OF OXALATE COMPLEXES OF TH WERE DETD. BY THE METHOD OF LIGAND
SUBSTITUTION.
1,((2,ARSONOPHENYL)AZO),2,HYDROXY,3,6,NAPHTHALENEDISULFONIC ACID
(THORON) IS RECOMMENDED AS THE SUBSTITUTE LIGAND. THE COMPNS. OF
OXALATE COMPLEXES OF TH IN MIXTS. OF HNO SUB3 AND OXALIC ACID WERE DETD.
IN SOLNS. WITH (H SUB2 C SUB2, O SUB4)-(TH PRIME4POSITIVE) CONCN.
RATIOS OF 1.3-13.0 AND HNO SUB3 CONCN. 0.12-0.5MU, THE TH IS PRIMARILY
IN THE FORM OF THE COMPLEX (TH(C SUB2 O SUB4)) PRIME2POSITIVE.   WITH (H
SUB2 C SUB2 O SUB4)-(TH PRIME4POSITIVE) RATIOS OF 13.0-33.0 AND THE SAME
HNO SUB3 CONCN. THE NEUTRAL COMPLEX (TH(C SUB2 O SUB4) SUB2) IS FORMED.
THE INSTABILITY CONSTS. OF THE 1ST AND 2ND COMPLEXES AT ION STRENGTH OF
0.5 ARE 2.8 TIMES 10 PRIME NEGATIVE9 AND 2.7 TIMES 10 PRIME NEGATIVE16,
RESP.

Radiobiology

GLAZUNOV, I. S., GRAFOV, A. A., IVANOV, V. A., and BRYZHAKHIN, G. B.

"Cerebral Circulation in Man Afflicted With Acute Radiation Sickness"

Abstract: Data are presented on the state of circulation and tonus of the
cerebral vessels in 10 patients afflicted with acute radiation sickness in
the moderate and severe stage. The observations were made 5-12 years from
the onset of the disease. Acute illness emerged in these subjects as a
result of a single dose of gamma-rays and neutrons in a total amount of 270
to 980 rem. Duration of the exposure varied from 1 sec to 20 min. The
patients were 30-49 years of age during the study. Rheoencephalography and
orbital plethysmography were used in combination with an appropriate somato-
-neurological examination. It was established that the dose of ionizing
radiation and in connection with it the severity of the illness affect the
cerebral circulation. The more severe the illness is, the most pronounced
is the drop in regional or zonal blood circulation at some time after start
of the illness. Data from orbital plethysmography showed that the volume
pulse of the eye which characterizes the state of the tonus of the eye
arteries was $16.1+8.6$ mm^3 for the patients afflicted with acute radiation
1/2

USSR

GLAZUNOV, I. S., et al., Meditsinskaya Radiologiya, Vol 16, No 3, Mar 71, pp 53-59

sickness of moderate degree and $-5.1+1.6$ mm^3 for the patients suffering from acute serious radiation sickness. The results obtained indicated that the adhesive-elastic properties of the cerebral vessels are enhanced with subsequently developing chronic vascular insufficiency. The neurological state of the patients included general symptoms of cerebral disorders such as headache, oculovestibular vertigo, as well as signs of microorganic disturbances of the central nervous system (nystagmus, reflexes of oral automatism, mild pyramid insufficiency). From the general physiological aspects, the data obtained indicated a premature aging of the body taking place as a result of acute radiation sickness. These signs included premature greying of the hair, a sharp decline in the libido, trophic skin disorders, and hardening of the crystalline lenses with development of radiation cataracts.

2/2

INTERACTION BETWEEN MAN AND AN ELECTRONIC COMPUTER IN OPERATIONAL PLANNING

Article by A. G. Bryzhatyy (Moscow Machine Building Plant Krasnyy Proletariy) and V. A. Terekhov and O. K. Tikhomirov, (Psychology Faculty Moscow State University); Moscow, Voprosy Psikhologii, Russian, No 6, 1972, pp 24-132]

It is well known that under modern conditions there is a considerable increase in the importance of improving control of the national economy. In one of his reports L. I. Brezhnev, not long ago spoke of the importance of control for development of the economy, speaking of the need for "raising the level of all work in control matters, bringing it into accordance with modern scientific requirements...." [2].

A thorough formulation of scientific control principles must include a psychological study of man's activity in the control sphere. This article is devoted to this problem.

1. Some Peculiarities in Designing Automated Control Systems

One of the ways for improving control methods is construction of automated control systems (ACS) by enterprises on the basis of electronic computers using the methods employed in economics and mathematics. Such control systems are usually called man-machine systems, since in production control in addition to functioning of an electronic computer man also performs definite functions and solves specific control problems.

In most cases controlling and controlled subsystems are distinguished in ACS. The controlled subsystem of an ACS at an enterprise includes such components as the individual work place (lathe), production sector and workshops. In this case the controlling subsystem will include the factory directors and the different services associated with the enterprise's administration. Despite the fact that the two subsystems are re-

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USSR   UDC: 539.4:624.012

BRYZHATYY, E. P., PETROVA, K. V.

"Effect of Inelastic Deformation on Crack Formation in Concrete Elements
Which are Eccentrically Compressed With Low Eccentricities"

V sb. Dlitel'n. deformativn. protsessy v beton. i zhelezobeton. konstruk-
tsiyakh (Long-Term Deformation Processes in Concrete and Reinforced Con-
crete Structures—collection of works), Moscow, Stroyizdat, 1970, pp 92-100
(from RZh-Mekhanika, No 4, Apr 71, Abstract No 4V831)

Translation: The paper presents the results of a study of crack formation
in concrete elements with low eccentricities. It is shown that the cal-
culation for crack formation recommended by existing norms gives an over-
statement of the actual crack resistance in many instances, and gives no
indication of the boundary where it is necessary to begin taking the ap-
pearance of cracks into consideration. It is recommended that calculation
for crack formation be done on eccentrically compressed elements beginning
at the boundary defined by the condition $e_0/h \geqslant 0.13$, and that inelastic
deformations in the compressed zone of the concrete be taken into account
at lower stresses than the bending compression strength of the concrete.
Authors' abstract.
1/1

- 44 -

BERLINER, M. A., Candidate of Technical Sciences, BRZHOZOVSKIY, B. M.,
Engineer

"A Laser Hygrometer"

Abstract: The paper describes a laser hygrometer developed by the authors
at Moscow Automobile and Highway Institute. The device is designed for
measuring the moisture content of limited (often very small) volumes of
gas. The resonator scheme is based on the relation between laser output
power and losses in the resonator. The wet gas to be studied is intro-
duced into the laser cavity, which is equivalent to introducing additional
losses into the cavity. The optical resonator is tuned to a wavelength
which coincides with the absorption line for water. The test chamber can
be made for continuous flow of the moisture-containing gas. Experimental
results agree with theoretical calculations.

1/1

USSR   UDC: 51:330.115

BUACHIDZE, S. R.

"Some Points in Planning a System of Operations. 1"

Tr. Gruz. politekhn. in-t (Works of the Georgian Polytechnical Institute),
1970, No 1(136), pp 84-92 (from RZh-Kibernetika, No 7, Jul 71, Abstract
No 7V659)

[No abstract]

1/1

USSR   UDC 621.357.1.035.14:661.874.321

BUBAKHIN, YU. T.

"The Resistance of the Organic Layer in a Two Layer Bath"

Tr. Novocherkas. politekh. in-ta (Works of the Novocherkas. Polytechnical
Institute), 259, 1972, pp 110-112 (from Referativnyy Zhurnal -- Khimiya,
No 8(II), 1973, Abstract No 8L273)

Translation: The results are given for a study of the change in the resistance
of the outer organic layer in a two layer bath as a function of the soaking
time in contact with the lower layer in an aqueous solution of $NiCl_2$. It was
determined that for several days the resistance of the upper layer increased.
A comparison was made of the change in the resistance with the placement of
an electrode in different conditions (mobile and non-mobile), with an elec-
trode located in different parts relative to the boundary between the two
layers.

1/1

USSR

UDC 612.017.1.014:46:612.112.3

BUBASHVILI, M. Ye., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow, and the Tbilisi Institute of Vaccines and Sera

"The Mechanism of Action of Nonspecific Stimulants of Immunogenesis. I The Effects of Adjuvants on Antibody Formation and Antigen Ingestion by Macrophages"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunologii, No 7, 1973, pp 115-120

Abstract: Studies were conducted with strains A and CBA mice to determine the effects of various adjuvants (Freund's complete adjuvant, S. typhi 0901 endotoxin, cadmium sulfate, ferric chloride) on antigen (SRBC) ingestion by peritoneal macrophages, and antibody response to S. typhi soluble Vi antigen and SRBC. Antigens and adjuvants were administered intraperitoneally. Control studies showed that only endotoxin increased the level (4-fold) of normal plaque forming cells in A mice spleens. In general, cadmium sulfate (60 μg) was most effective in enhancing serum levels of antibody to SRBC, whether administered jointly with low (5 x 10^6 cells) or high (35 x 10^7 cells) SRBC doses. Similar findings pertained to enhancement of antibody
1/2

USSR

BUBASHVILI, M. Ye., Zhurnal Mikrobiologii, Epidemiologii i Immunologii, No 7, 1973, pp 115-120

forming cells in the spleens of immunized mice as detected by the Jerne technique. However, in both cases the effects of adjuvants were much more significant in mice immunized with low SRBC doses. Both cadmium sulfate and ferric chloride were highly effective in enhancing the antibody response to the Vi antigen. The simultaneous administration of the Vi antigen and the endotoxin depressed the antibody response to a level below that obtained without the adjuvant. The latter phenomenon was ascribed to the similarity of the two agents. Furthermore, endotoxin was found to cause the most widespread distribution of antigen within the reticuloendothelial system. Each adjuvant was found to accelerate antigen catabolism when administered jointly with ^{51}Cr labeled SRBC and to enhance retention of the label in the lysosomal fraction of the macrophages. At the end of three days the amount of label in that fraction was 9-16 times as great in the adjuvant treated mice as in the control animals.

2/2

USSR   UDC 666.97.035.51

BUBEN, E. M., Engineer, and MIKHAYLOV, I. G., Engineer

"Circular Conveyer for the Production of Objects From Hot Concrete Mixtures"

Moscow, Beton i Zhelezobeton, No 10, Oct 72, pp 30-31

Abstract: Results are reported on introduction of the circular conveyer technology for the production of reinforced concrete objects, as staircase flights, platforms, balcony plates, in thermoforms with preliminary electric heat-up of the concrete mixture and thermoforming of the objects. The described technology was introduced at the ZhBK-21 Factory of Reinforced Concrete Structures of the Dneprozhelezobeton Combine in Dnepropetrovsk. The technical characteristics of a conveyer with an yearly output of 4000 m^3 are indicated and its operation is discussed. The technological design features of the conveyer make it possible to apply a repeated vibration of objects formed from hot mixtures; this provides, in combination with addition of 2% calcium chloride, an increase of concrete strength by 15-20% and a considerable time reduction in the additional thermal treatment of the objects. Applying the methods of preliminary electric heat-up of concrete mixture and hot forming of objects in combination with the specific production technology, 1/2

USSR

BUBEN, E. M. and MIKHAYLOV, I. G., Beton i Zhelezobeton, No 10, Oct 72, pp 30-31

the efficiency of labor could be increased by 20%, at the same time lowering the net cost of the production by 15-20%. Three illustrations, one table.

2/2

BUBEN, N. Ya.

Chemistry

TENTH INTERNATIONAL SYMPOSIUM ON FREE RADICALS

[Article by doctors of Chemical Sciences N. Ya. Buben and Yu. ... Moscow, ... SSSR, Russian, Vol 41, No 12, December 1971, pp 72-74]

The Tenth International Symposium on Free Radicals was held from 31 August to 4 September in Lyons, France. The composition of the participants was very representative -- many leading scientists working in the area of the chemistry of free radicals and ESR spectroscopy were present.

The program of the symposium included not only questions of the physics and chemistry of free radicals but also a number of related rapidly developing problems -- the application of radicals as "tags" and "sondes" to study the structure of complex molecules and of solid and liquid matrices, the polarization of nuclear and electronic states in radical reactions, the formation of excited particles, etc.

Eighteen survey reports ordered by the leading scientists in the given area were read, and 40 short reports on original results. A considerable portion of the reports were devoted to experimental methods of studying active states of molecules in general and radicals in particular.

In the lectures on the theory of the structure of molecules ... reports given by M. Cerina and C. Vinkov (USA) ...

BUBENNOV, Yu. F.

data link systems

All-
Communications/
and DATA LINK Systems

JPRS 59662

31 July 1973

CARDY

TECHNICAL FACILITIES OF THE SIREMA-1 DATA LINK SYSTEM

[Article by Candidates of Technical Sciences Y. N. Silayev, O. R. Bazilenko, V. L. Bakhrakh, Yu. F. Bubennov, V. Ye. Abramskiy, and Engineers A. S. Ipatov, Yu. M. Muravlenya, V. Y. Popov; Moscow, Pribory i Sistemy Upravleniya, Russian, No 4, April 1975, pp 1-4]

The rational organization of a data link in geographically scattered systems of the type Sirena [1] largely determines the economic effectiveness of the entire system.

A data link combines into one system the peripheral subdivisions [2] and the technological data processing center (UPC) [3]. The link is a set of channels and technical facilities that provide a high communication channel utilization coefficient, reliable transmission and processing of data and direct multichannel communications. Accordingly, the technical facilities of a link are divided into three groups: data traffic concentration facilities (UPC); data exchange reliability group and multichannel communications group.

Means of Concentrating Data Flows

The purpose of facilities of this group is to ensure economically efficient utilization of uncommutated channels k_c for a given subscriber servicing quality. The prerequisites for extensive application of various data traffic concentration methods in a data link were formulated in [1].

According to the criterion $\phi = l_i/l_j$ of the ratio of distances between the sources (1-n) and the concentrator k and between the concentrator and UPC, the following methods of traffic concentration may be used (Figure 1): local concentration ($l_i << l_j; l_i < 100$ m); central traffic concentration ($l_i << l_j; l_j < 100$ m), concentration of data from geographically scattered points ($l_i = l_j; l_i, l_j >> 100$ m). The technical facilities of UPC may be based on the utilization of the principles of commutation of either the channels or the traffic.

- 1 -

[1 - USSR - F]

1/2   018   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--THE EXTRACTION OF USEFUL MINERALS FROM THE BOTTOM OF SEAS AND
  OCEANS -U-
AUTHOR-(05)-NUROK, G.A., KOSTIN, V.N., BRUYAKIN, YU.V., BUBIS, YU.V.,
  KOLOCHNIKOV, L.N.
COUNTRY OF INFO--USSR

SOURCE--(DOBYCHAPOLEZNYKH ISKOPAYEMYKH SO DNA MOREY I OKEANOV) MOSCOW,
  NEDRA, 1970, 238 PP
DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--GOLD, TIN, TITANIUM, DIAMOND, MINERAL, OCEAN BOTTOM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/1983   STEP NO--UR/0000/70/000/000/0001/0238

CIRC ACCESSION NO--AM0114384
                        UNCLASSIFIED

CIRC ACCESSION NO--AM0114334
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: INTRODUCTION
   3.   CHAPTER I USEFUL MINERALS OF SEAS AND OCEANS 8. CHAPTER II
   PROSPECTING AND SAMPLING UNDERWATER ALLUVIAL DEPOSITS 40.   CHAPTER III
   THE TECHNOLOGY OF UNDERWATER EXPLOITATION OF DEPOSITS OF USEFUL
   MINERALS FROM THE BOTTOM OF SEAS AND OCEANS 71. CHAPTER IV TECHNICAL
   MEANS FOR THE EXTRACTION OF USEFUL MINERALS FROM THE BOTTOM OF SEAS AND
   OCEANS 142. CHAPTER V ENRICHMENT OF SEA SANDS OF USEFUL MINERALS 205.
   CHAPTER VI TASKS AND WAYS TO SOLVE THE PROBLEM OF UNDERWATER EXTRACTION
   OF USEFUL MINERALS IN THE USSR 233. LITERATURE 237.   GIVEN ARE: A
   GEOLOGICAL CHARACTERISTIC OF SEA ALLUVIAL DEPOSITS, METHODS OF
   PROSPECTING AND SAMPLING THESE DEPOSITS; INFORMATION IS GIVEN ON THEIR
   PRESENCE IN SEAS AND OCEANS AND THE RECOVERABILITY AFTER CONDUCTING
   EXPLOITATION WORK. CITED ARE DATA ON THE TECHNOLOGY OF UNDERWATER
   EXTRACTION OF GOLD, TIN, TITANIUM CONTAINING AND MAGNETITE SANDS,
   DIAMONDS AND OTHER USEFUL MINERALS. GIVEN ARE ECONOMIC RESULTS OF
   UNDERWATER EXTRACTION AND METHODS TO DETERMINE THE ECONOMIC
   EFFECTIVENESS AND ALSO THE DIRECTION OF THE DEVELOPMENT OF THIS
   TECHNOLOGY.

UNCLASSIFIED

USSR   UDC: 531.01

ODINTSOV, A. A., BUBLIK, G. F.   •   •

"On the Problem of Improving the Response of a Gyrocompass With Indirect
Control"

Vestn. Kiyev. politekhn. in-ta. Ser. priborostr. (Kiev Polytechnical Insti-
tute Herald. Instrument Building Series), 1970, No 1, pp 3-8 (from RZh-
-Mekhanika), No 7, Jul 71, Abstract No 7A99)

Translation: The paper deals with a scheme of a gyrocompass with indirect
control, the axle of the outer frame being held in a torsion suspension.
The authors determine the conditions under which the readings of the gyro-
compass are independent of the effect of transport accelerations. It is
shown that the period of natural undamped oscillations of the gyrocompass
can be made less than the Schuler period without violating this condition.
Authors' abstract.

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BUBLIK, G.F.

CHOICE OF SEVERAL PARAMETERS OF ADJUSTABLE GYROCOMPASSES

UDC 62.752.4

This article examines the question of selecting basic parameters for adjustable gyrocompasses with the aid of nomograms.

Any number of papers have been devoted to analyzing errors in adjustable gyrocompasses with indirect control. The questions of designing these instruments, which are receiving increasingly wide use in systems of navigation and control of moving objects, have been discussed inadequately in the literature. In the present article we examine questions of selecting the basic parameters of adjustable gyrocompasses in which compensation is carried out of the moments of the forces of inertia producing ballistic errors in the instrument.

The equations of motion of an adjustable gyrocompass with indirect control can be written in the form:

$$H\dot{\beta} + H\omega_2\alpha + k_1\beta = -k_1\frac{W_\xi}{g} + L_z^k$$

$$H\dot{\alpha} - (H\omega_2 + k_2)\beta = -k_2\frac{W_\eta}{g} + L_x^k \qquad (1)$$

where $W_\xi = \dot{V}_\xi + 2\omega_2 V'_\eta$; L_z^k and L_x^k are the external moments applied to the axes of the gyrocompass support for compensation of the ballistic errors formed in accordance with the expressions:

-7-

101690s   Treatment of polyamide synthetic leather with glycerol. Bublik, I. M.; Kul'chitskii, S. I.; Turte, L. S.; Shnirel'man, R. A.; Tumarkina, I. D. (USSR). Kozh.-Obuv. Prom. 1970, 12(1), 51-4 (Russ). Artificial leather is made by satg. nonwoven, stitched cloth with a polyamide soln. After hardening, the rigid semi-product is immersed in a glycerol (I) bath to soften it. An increase of I concn. of $\leq 40\%$ increased the amt. of I absorbed by leather. A further increase in I concn. is undesirable, since it remains on the surface. The bath temp. has no effect on the I absorption. The optimum conditions are $20°$ and 40% I concn.; the excess I is squeezed out by rollers.   CPJR

1/1

7

USSR

UDC 632.95

BUBLIK, L. I., GAVRILOVA, G. V., KOSMATYY, YE. S.

"Application of Thin-Layer Chromatography for Express Analysis of Cyneb Residues in Tobacco"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 136-138 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N477)

Translation: A study was made of the possibility of using thin-layer chromatography to analyze cyneb (I) with respect to potassium xanthogenate which is formed as a result of interaction of CS_2 released during acid decomposition of I with a solution of KOH in MeOH. The adsorbent is a mixture of silica gel KSK (40 mesh) with Al_2O_3, II degree of activity (1:1). The chromatographic analysis is performed in a mixture of acetone-MeOH (20:1). The chromogenic reagent is 2% solution of $(NH_4)_2 MoO_4$ acidified with HCl.

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USSR

UDC 632.95

KOSMATYY, YE. S., BUBLIK, L. I.

"Chromatooscillopolarographic Method of Analyzing Certain Organochlorine Insecticides in Plants and Soil"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 230-233 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N436)

Translation: In order to analyze residues of heptachlor (I) and epoxide I (II), the extract is evaporated and subjected to preparative thin-layer chromatography a silica gel KSK, Al_2O_3 or mixtures of them in a 1:1 ratio in hexane. The adsorbent zones containing I and II are collected and transferred to an electrolytic cell. An oscillopolarogram is taken. The I and II are reduced on a mercury drop electrode against a background of 0.005 normal Me_4NBr in 40% alcohol, and the peaks are given with peak potentials of -1.2 and -1.35 respectively.

1/1

USSR   UDC 678.744.3-139.01:53

AMELINA, M. A., MAKASHOV, G. F., KHOROSHILOVA, I. P., BOCHARNIKOV, V. K., and BUBLIK, V. A.

"Radiation Hardening of Oligomeric Esteroacrylates"

Abstract: The use of ionizing radiation for polymerization of unsaturated polyesters, conducted at elevated temperatures in the absence of catalysts, enables one to change the rate and the extent of the polymerization process within a broad range, control rigorously the degree of hardness of the obtained products, improve purity, homogeneity, decrease internal stresses of the products and impart to them higher thermal stability and mechanical strength. 'The purpose of the article was to study the effect of chemical structure of polyesters, particularly oligomeric esteroacrylates on the rate of their radiation polymerization, physical and mechanical properties of radiation hardened products and the magnitude of radiation dose which is necessary to produce materials with optimum physical and mechanical indices. Commerical oligomeric esteroacrylates were investigated: MGF-7, MGF-8, MGF-9 and TMGF-11. A cobalt-60 gamma radiation source was used at room temperature. The dose rate was 180 rad/sec. Thermochemical polymerization
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USSR

AMELINA, M. A., et al., Plasticheskiye Massy, No 4, Apr 71, pp 5-7

was conducted in parallel to radiation hardening for comparison. It was
found that radiation polymerization of oligomeric esteroacrylates produces
higher quality products than those obtained by ordinary thermochemical
polymerization. Since the radiation doses which are needed in order to
obtain radiation hardening of polymers are low the use of this method in
certain cases is expedient.

2/2

1/2   029   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--PRECISION DETERMINATION OF THE LATTICE SPACING OF GERMANIUM USING A
  WIDE DIVERGENCE X RAY BEAM -U-
AUTHOR-(04)-BELUGINA, N.V., BUBLIK, V.T., GORELIK, S.S., SHVARTSMAN, V.L.

CCUNTRY CF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(3), 306-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--GERMANIUM, DIFFRACTOMETER, CRYSTAL LATTICE, ELECTRON,
  METALLURGIC RESEARCH FACILITY/(U)EG100A ELECTRON DEFFRACTOMETER

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0291   STEP NO--UR/0032/70/036/003/0306/0307

CIRC ACCESSICN NO--AP0124050
                    UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0124050   PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. AN ATTACHMENT IS DESCRIBED
ALLOWING MEASUREMENTS TO BE CARRIED OUT IN THE ELECTRON DIFFRACTOMETER
EG-100-A. BY THERMOSTATING TO PLUS OR MINUS 0.5DEGREES DURING THE
EXPOSITION AND LOWERING THE VOLTAGE BY 25--30 KV, GE LATTICE SPACINGS
WERE DETD. WITH AN ABS. ERROR 2 TIMES 10 PRIME NEGATIVE5 ANGSTROM.
VALUES FOR ZN AND NI RADIATION AGREE WITHIN 5 TIMES 10 PRIME NEGATIVE6
ANGSTROM.   FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

USSR   UDC 548.4

BUBLIK, V. T., KARATAYEV, V. V., KULAGIN, R. S., MIL'VIDSKIY, M. G.,
OSVENSKIY, V. B., STOLYAROV, O. G., KHOLODNYY, L. P., State Scientific-Research
and Design Institute of the Rare Metals Industry

"Nature of Point Defects in GaAs Single Crystals as a Function of Composition
of Melt Used in Growing Them"

Abstract: The dependence is studied between the nature and concentration of
point defects in GaAs monocrystals and the composition of the growth melt.
During the studies, the density of specimens was determined with high pre-
cision, lattice periods and internal friction were measured. The results
produced indicate that single-phase GaAs crystals can be grown from melts
containing between 46.7 and 53.5 at. % As, crystals of stoichiometric com-
position being produced from a melt rich in As, with its concentration in
the melt 50.5 at. %.

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Acc. Nr.: ___`AR0113330`___   Ref. Code: _ЦR0000_

USSR   UDC: 624.145.1

BUBLIKOVA, Yu. I. and KUZUB, G. Ya.

Novosibirsk, Tr. Novosib. In-ta Inzh. Zh-D. Transp. (Transactions
of the Novosibirsk Institute of Railroad Transportation Engineer-
ing), No. 94, pp 76-80 (From Referativnyy Zhurnal--Vodnyy Trans-
port, Abstract No. 1B22)

Translation: The physical picture of the phenomenon of ice pres-
sure on supports with vertically cut edges is analyzed and the
computational expressions for its determination are proposed. It
is shown that for a large expenditure of kinetic energy of the
ice field, the effect of support deformation does not reduce the
computed pressure determined from ice break-up conditions. It is
proposed that the least of the computed quantities from the break-
up conditions as well as from its remainder be taken as the com-
puted pressure. Five illustrations, one table, bibliography of
nine.

REEL/FRAME

19930416

1/2   021   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--CLINICO LABORATORY PARALLELS IN CHOLESTATIC FORMS OF INFECTIOUS
  HEPATITIS AND JAUNDICE OF NEOPLASTIC ORIGIN -U-
AUTHOR-(02)-LYSKOVTSEV, M.M., BUBLIY, V.P.

COUNTRY OF INFO--USSR

SOURCE--LINKICHESKAYA MEDITSINA, 1970, VOL 48, NR 3, PP 46-49

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEPATITIS, JAUNDICE, BLOOD SERUM, NEOPLASM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0102   STEP NO--UR/0497/70/048/003/0046/0049
CIRC ACCESSION NO--AP0125925
                        UNCLASSIFIED

CIRC ACCESSICN NO--AP0125925

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE SETS FORTH DATA OF THE
COMPARATIVE STUDY OF CLINCO LABCRATORY INDICES IN CHOLESTATIC FORMS IN
INFECTIOUS HEPATITIS (32 CASES) AND OBSTRUCTIVE JAUNDICE (35 CASES).
ALONG WITH A NUMBER OF SIMILAR SYMPTCMS IN THE REFERRED TO DISEASES
DIFFERENCES ALSO EXIST: A RELATIVE SHORT PREICTERIC PERIOD (1-2 WEEKS),
ARTHRALGIA, LEUKOPENIA, LYMPHOMONOCYTOSIS, REDUCTION OF ESR AND
PROTRACTED ICTERIC PERIOD (8-10 WEEKS TO 5 MCNTHS). NEOPLASTIC JAUNDICE
IS CHARACTERIZED BY A PROLONGED PREICTERIC PERIOD (FROM 3-12 AND MORE
WEEKS), PROGRESSION CF JAUNDICE, PERSISTENT ITCHING OF THE SKIN, A
POSITIVE COURVASIER'S SINDROME, ACCELERATION OF ESR AND ANEMIZATION. OF
THE BIOCHEMICAL INDICES THE AUTHORS GIVE PREFERENCE TO THE DIFFERENTIAL
DIAGNOSIS OF IRGLE'S TEST AND DETERMINATION OF THE BLOOD SERUM
SEROMUCOID. IN CHOLESTATIC HEPATITIS THERE IS COMMONLY NOTED A NORMAL
OR REDUCED SEROMUCOID LEVEL IN A NEGATIVE IRGLE'S TEST. IN OBSTRUCTIVE
JAUNDICE ASSOCIATED WITH NEOPLASMS THERE IS USUALLY OBSERVED A HIGH
SEROMUCOID CONTENT AND POSITIVE IRGLE'S TEST. THE PREDNISOLONE TEST IS
ALSO OF A DEFINITE DIAGNOSTIC IMPORTANCE. IN CHOLESTATIC HEPATITIS IT
IS USUALLY POSITIVE (81.4PERCENT) AND IS ALWAYS NEGATIVE IN OBSTRUCTIVE
JAUNDICE.   FACILITY: KHAR'KCVSKOGO MEDITSINSKUGO INSTITUTA.

UNCLASSIFIED

USSR   Higher Algebra & Geometry and Topology
                                        UDC 518/539

BUBLYK B. M., and LYASHKO, I. I., Corresponding Member of the Academy
of Sciences Ukrainian SSR, Kiev State University

"Determining the Dynamic Characteristics of Orthotropic Plates by the
Method of Total Representations"

Kiev, Dopovidi Akademii   Nauk Ukrainsikoi   RSR, Seriya A -- Fizyko-
Tekhnichni ta Matematychni Nauky, No 8, Aug 70, pp 702-706

Abstract: The use of the finite difference method to solve problems
in elasticity theory involves difficulties resulting from the need to
study systems of algebraic equations of a rather high order, especial-
ly in the case of problems involving the search for the dynamic char-
acteristics of thin elastic plates.   The article snows that these dif-
ficulties can be largely overcome by the method of total representa-
tions.   The authors consider problems of determining the frequencies
and forms of natural oscillations, critical forces, and forms of stabil-
ity loss of orthotropic plates. Solutions are given in relation to
boundary conditions. The problem of finding the frequencies and criti-

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USSR .

cal forces reduces to finding the roots of   certain characteristic
determinants of a rather low order, which does not exceed the number
of nodes along the plate edges. A study of these determinants makes
it possible to prove theorems about their representation in the form
of the sums of partial fractions and polynomials of low degree. The
usual net method as applied to problems of this type involves finding
the roots of characteristic determinants of a high order, equal to
the number of all interior points of a domain.

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USSR

BUDNIK, A. P., RABOTNOV, N. S., SEREGIN, A. A., Power Engineering Physics
Institute

"Levels of Even-Even Nuclei With High Moments in the Phenomenological Collective Model of the Nucleus"

Abstract: The energies of levels of even-even nuclei are calculated for angular momenta up to and including $J = 12$ within the framework of the phenomenological collective model of the atomic nucleus with potential energy depending on the deformation variables β and γ. It was found that the relative energies of the levels of the base rotational band for the given class of potentials are always greater than for a spherical nucleus. The levels of the spherical nucleus which correspond to the highest moment $J = 2N$ for the principal quantum number $N = 2n + \lambda$ make a transition to levels of the base rotational band with $E(J) \sim J(J + 1)$ as deformation appears and increases. The theoretically permissible region of values of $\varepsilon_1(J)$ with a given $\varepsilon_1(4)$ is fairly narrow for $\varepsilon_1(4) \leqslant 2.5$, and the relation between $\varepsilon_1(J)$ and $\varepsilon_1(4)$ is linear with a fair degree of accuracy; then there is a sharp widening of

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USSR

BUDNIK, A. P. et al., Yadernaya Fizika, Mar 72, pp 470-473

this region which is more pronounced the larger the angular momentum. A
comparison with experimental data shows satisfactory agreement. The authors
thank V. V. Bulychev and T. I. Stavinskaya for assistance with the computer
calculations. One figure, bibliography of twelve titles.

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USSR   UDC   681.326.34

BUBNOV, A. I., ROMANKEVICH, A. M., RUKKAS, O. D., TOLPANOV, Yu. A., Kiev
Electronic Computer and Controlling Machine Plant

"A Device for Troubleshooting an Electrical Installation"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
1970, No 36, Soviet Patent No 288420, class 42, filed 14 Feb 69, published
3 Dec 70, p 156

Translation: This Author's Certificate introduces a device for trouble-
shooting an electrical installation. The device contains registers, input,
output and control modules, a comparison circuit, logic elements, a pulse
generator and a device for registration of electrical connections. As a
distinguishing feature of the patent, the device is simplified and speed
is increased by connecting the output of the input module to the input of
one register, and through a coincidence circuit to the input of the other
register. The second input of the coincidence circuit is connected to the
output of the control module, and the outputs of the registers are connected
to the inputs of the device for registration of electrical connections, the
comparison circuit and the output module. The outputs of the output
module are connected to the inputs of the input and control modules.

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USSR   UDC 621.375.82

BUBNOV, M. M., DIANOV, Ye. M., and NIKITIN, Ye. P.

"Dependence of Laser Resonator Thermal Strain on Initial Temperature of Neodymium Glass Rod"

Kratk. soobshch. po fiz. (Brief Communications on Physics), 1973, No 3, pp 26-30 (from RZh-Fizika, No 10, Oct 73, Abstract No 10D837 by K. O. I.)

Translation: The interferometric method is used to measure the variation, with temperature, of the thermal strain of an Nd glass-based laser resonator at temperatures ranging from -20 to +85° C. Measurements were taken for two types of Nd glasses -- series and experimental lime silicate glass, which provides low resonator thermal strains. It is shown that within the limits of experimental error the magnitude of the resonator thermal strain does not depend on the initial rod temperature for either type of glass. It is noted that the quantity dn/dT of the investigated glasses weakly depends on the temperature in the -20 to +85° C range. Bibliography with 10 titles.

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USSR   UDC 548.55 : 612.373.8

BUBNOV, M. M., BUZHINSKIY, I. M., DIANOV, Ye. M., MAMONOV, S. K., MIKHAYLOVA,
L. I., and PROKHOROV, A. M., Academician, Physics Institute imeni P. N.
Lebedev, Academy of Sciences USSR, Moscow

"Change in the Sign of the Thermal Lens of Glass Laser Rods With a Change in
the Glass Thermooptical Constant"

Abstract: The article describes results of a study of glasses with both
positive and negative, constant thermooptical values. The focal distances of
the thermal lens which forms during periodical laser rod pumping were measured
by the autocollimation method. It was found that the thermal lens power
decreases, as the thermooptical constant decreases, and changes sign at
some constant thermooptical values. This correlation between lens power and
the thermooptical constant of the glass occurs for glasses of various compo-
sitions (silicate, boron phosphate, phosphate). The mechanisms leading to
lens formation are considered in order to explain this relation.

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TITLE--MECHANISM OF NUCLEOPHILIC SUBSTITUTION -U-

AUTHOR-(04)-BILEVICH, K.A., BUBNOV, N.N., OKHLOBYSTIN, O.YU., RADZHABOV,
    N.G.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSR 1970, 191(1), 119-21 (PHYS CHEM)

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, CHLORINATED ORGANIC COMPOUND, FREE
    RADICAL, CHEMICAL REACTION MECHANISM, EXCHANGE REACTION, REACTION
    KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0712   STEP NO--UR/0020/70/191/001/0119/0121

CIRC ACCESSION NO--AT0124382
                        UNCLASSIFIED

2/2   015   UNCLASSIFIED   PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AT0124382
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM DATA OF THE RATE OF INITIAL
  FORMATICN OF ARO RADICALS AS RELATED TO CONCN. OF ARO PRIME NEGATIVE ION
  AND TRITYL CHLORIDE IN TETRAHYDROFURAN SOLN. AT VARIOUS CONCNS. IN SOLN.
  IT WAS CONCLUDED THAT THE FORMATION OF SUCH ARO RADICALS OCCURS BY 2
  PATHS. THEY FORM ACCORDING TO A CARBONIUM MECHANISM THAT IS KINETICALLY
  IDENTICAL WITH THE SWAIN TYPE REACTIONS, AND THEY ALSO FORM FROM
  INTERACTION OF THE ARO PRIME NEGATIVE ION WITH TRITYL CATION FORMED BY
  DISSOCN. OF PH SUB3 CCL, WHICH IS A PURELY S SUBN 1 INGOLD TYPE REACTION
  OF 1ST ORDER IN RESPECT TO SUBSTRATE AND ZERO ORDER IN RESPECT TO THE
  NUCLEOPHILE. THE CARBONIUM PORTION OF THE PROCESS IS DESCRIBED BY
  SUMMARY 3RD ORDER KINETICS: 1ST ORDER IN RESPECT TO THE HALIDE AND 2ND
  ORDER IN RESPECT TO PHENOXIDE ION. THE REACTION STUDIED WAS THAT OF PH
  SUB3 CCL AND P,ME SUB3 CC SUB6 H SUB4 OK.   FACILITY: INST.
  ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 629.78:533.522

BUBNOV, V. A.

"Temperature Discontinuity and Slipping on Flow of a Viscous Liquid Around a Body"

V sb. Kontaktno-gidrodinamich. teoriya smazki i yeye prakt. primeneniye v tekhn. (Contact-Hydrodynamic Theory of Lubrication and Its Practical Application in Engineering--collection of works), Kuybyshev, 1972, p 21 (from RZh-Raketostroyeniya,otdel'nyy vypusk, No 12, Dec 72, Abstract No 12.41.138)

Translation: In the problems of contact hydrodynamics a study has been made of the movement of a viscous liquid between two elastically deformable surfaces. As a result of smallness of the clearance between the surfaces, the hydrodynamic velocity gradients will be large. However, the Navier-Stokes equations are derived under the assumption of smallness of the indicated gradients since the Stokes hypothesis provides the basis for them. This hypothesis expresses the viscous stresses linearly in terms of the deformation rate. Consequently, the problem of the legality of using the Navier-Stokes equations in problems of contact hydrodynamics arises. A generalization of the Navier-Stokes equations considering the nonlinear dependence of the viscous stress tensor on the deformation rate tensor was made by American researcher S. Trusdell. However, the new equations of the hydrodynamic continuum require

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USSR

BUBNOV, V. A, Kontaktno-gidrodinamich. teoriya smazki i yeye prakt. primeneniye v tekhn., Kuybyshev, 1972, p 21

reexamination of the problem of the boundary conditions. In the given paper, the concept of Trusdell and Maxwell were used to study the conditions of inter-action of the liquid molecules with the solid wall. It turned out that the high shear rates can cause slipping of the liquid with respect to the solid wall and the presence of a temperature discontinuity.

2/2

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Acc. Nr:
AP0036436

Ref. Code: UR 0213

K. V. MOROSHKIN, V. A. BUBNOV, R. P. BULATOV

WATER CIRCULATION IN THE SOUTHEASTERN ATLANTIC

Summary

Experimental studies were carried out during the 3rd cruise of the R/V «Akademik Kurchatov» to verify the hypothesis by V. G. Bogorov, V. N. Stepanov and R. P. Bulatov who suggested the cyclonic character of water circulation resulting in the high biological productivity in the eastern parts of the tropical zones of the oceans. A detailed hydrological survey with long-term current measurements at buoy stations have revealed a large-scale tropical cyclonic gyre existing between 10 or 20 m and 300 m depths under a very thin surface wind-driven current. Its northern periphery is formed by the South Equatorial counter-current between 5° and 9° S latitudes with 30 to 50 cm/sec velocities. Near the African coasts this counter-current changes into the Angola current with the maximum velocities of about 50 cm/sec between latitudes 9° and 16° South. The Angola current penetrates as deep as 250 to 300 m below the surface and embraces both the shelf and the continental slope. South of the area under study, the Benguella

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AP0036436

current turns to the west and has the width from 200 to 300 miles and the maximum velocity of about 15 or 20 cm/sec. There are three streams in the Benguella current running along the shore as far north as 13—14°S latitude. The interaction of the second northern stream of the Benguella current with the Angola current forms a divergence zone along 11°E longitude between 17° and 13°S latitudes. The quasi-stationary anti-cyclonic curl in the upper 100 m layer with the center at 7°30'S latitude and 9°30'E longitude has been found to the south-west of the Congo River mouth.

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19721281

2/2

USSR

BUBNOV, V. D., and VOROB'YEV, V. I.

"Resistance of White Rats and the State of Their Hypophysis-Adrenal Gland System During Combined and Successive Action of High Temperature and Acute Hypoxia"

Abstract: The resistance of white rats to the separate and combined action of two stress factors -- 1) hypoxic hypoxia produced by keeping each animal in a sealed 3-liter glass container (humidity controlled) and 2)hyperthermia produced by placing the animals in open glass containers in an incubator set at 39°C -- was investigated by determining the survival time and the activity of the hypophysis-adrenal gland system (HAS) by means of an index representing a sum of the changes occurring in eosinophil cell concentration in peripheral blood, ascorbic acid concentration in the adrenal cortex, eosinophilolytic activity in the hypophysis and adrenal glands, and the weight of the adrenal glands. It was found that the animals are most resistant (the longest survival time) when hypoxia is preceded by hyperthermia, and somewhat less resistant when hypoxia is not preceded by hyperthermia; in either case, the HAS is
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USSR

BUBNOV, V. D., and VOROB'YEV, V. I., Biologicheskiye Nauki, No 10, 1971, pp 38-43

highly active just prior to death. The animals are much less resistant when hypoxia with hyperthermia is preceded by hyperthermia, and least resistant when the two stress factors are applied without preliminary hyperthermia; in these two cases, there is no correlation between the activity of the HAS and the survival time.

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BUBNOV, V.P.

JPRS 60500

16 November 1973

DISSOCIATING GASES AS COOLANTS AND WORKING SUBSTANCES AT ATOMIC POWER PLANTS

CONTENTS

- a -

[I - USSR - L]

USSR

UDC 621.039.524.034.3:621.039.526

3

KRASIN, A. K., NESTERENKO, V. B., KOLYKHAN, L. I., BUBNOV, V. P., IL'IN, A. YA.,
SLIZOV, V. P., SHURFROV, YU. V.

"Experimental Power Plant with a Gas Cooled Fast-Neutron Reactor and a Dissoci-
ating Heat Transfer Agent (BRG-20)"

Translation: The possibility of creating an experimental industrial atomic
power plant with a gas-cooled fast neutron reactor and a dissociating heat
exchange agent is investigated. The parameters of the device and the required
volume of experimental research are discussed. There are two illustrations and
a four-entry bibliography.

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USSR

UDC 621.039.524.034.3

BUBNOV, V. P., ZAKHAROVA, I. S., RAZUMOVA, G. A.

"Effect of the Heat of Chemical Reaction on the Efficiency of Thermodynamic Cycles in Chemically Reacting Working Mediums"

Translation: A study was made of the characteristic features of thermodynamic cycles in chemically reacting working mediums. Estimates of the effect of the heat of chemical reaction on the efficiency of the gas and gas-liquid cycles are presented. There are two illustrations and a five-entry bibliography.

1/1

Nuclear Science and Technology

USSR

UDC 621.039.52

KRASIN, A. K., NESTERENKO, V. B., KOLYKHAN, L. I., BUBNOV, YA. P., IL'IN, A. YA., SILZOV, V. P., and SHUFROV, YU. V.

"Experimental Power Installation With Gas-Cooled Fast-Neutron Reactor and Dissociating Heat-Transfer Medium (BRG-20)"

Translation: The possibility is studied of creating an experimental pilot scale atomic power plant with a gas-cooled fast-neutron reactor with dissociating coolant. The parameters of the installation and required volume of experimental study are discussed. 2 figures, 4 biblio. refs.

1/1

USSR

UDC 621.382

BUBNOV, Yu. Z., LUR'YE, M. S., TOKAREV, P. D.

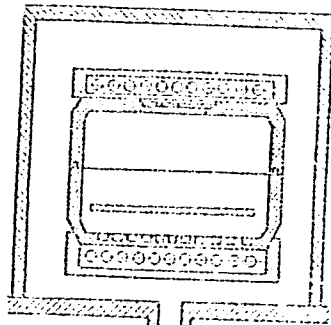"A Device for Vacuum Application of Films of Semiconductor Compounds"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 22, Aug 71, Author's Certificate No 309416, Division H, filed 17 Feb 70,
published 9 Jul 71, p 204

Translation: This Author's Certificate introduces a device for vacuum
application of films of semiconductor compounds. The device contains an
enclosed chamber in which the substrate is located together with a shield
and the material to be vaporized. The unit also contains heating elements.
As a distinguishing feature of the patent, films of stoichiometric compo-
sition and structure are produced by making the ratio of the length of the
chamber to its diameter 0.5-1.5.

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BUBNOV, Yu. Z., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 22, Aug 71, Author's Certificate No 309416, Division H, filed 17 Feb 70, published 9 Jul 71, p 204

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- 153 -

BALODE, V. A., and BUBOVICH, V. I., Institute of Microbiology imeni Avgust
Kirkhenshteyn, Academy of Sciences, Latvian SSR

"The Effect of Some Aminoadamantane Derivatives on Plaque Formation by
Influenza Virus"

Abstract: A culture of chick embryo fibroblasts was used to test the anti-
viral action of 3 aminoadamantane derivatives (JP-6, JP-7, JP-76) and 1
adamantane derivative (JP-20), evaluated by their ability to decrease the
infection titer of influenza type A virus (fowl plague virus, Weibridge
strain). JP-20 was equal to aminoadamantane in suppressing plaque forma-
tion. JP-6, JP-7, and JP-76 were much less effective in this respect.
The antiviral activity of all the preparations was most pronounced when
the fibroblasts were incubated with the compounds before infection. This
means that the compounds influence the early stages of influenza virus
replication and are likely, therefore, to have more prophylactic than
therapeutic effect.

1/1

TITLE--OXIDATIVE CHLORINATION OF BUTYNEDIOL -U-

AUTHOR-(03)-KOGAN, L.M., BOBROVA, T.I., BURMAKIN, N.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 926-8

DATE PUBLISHED-------7C

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATION, ALCOHOL, CHLORINATED ORGANIC COMPOUND, ALKENE,
   SOLVENT ACTION, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1959   STEP NO--UR/0080/70/043/004/0926/0928

CIRC ACCESSION NO--AP0132201
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0132201
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF TEMP.,
2,BUTYNE,1,4,DICL (I) TO SOLVENT AND CL-I MOLAR RATIOS ON THE COURSE OF
THE OXIDATIVE CHLORINATION OF I WAS STUDIED. THE REACTIONS WERE CARRIED
OUT BY INTRODUCING CL FOR 3-5.5 HR AT 20-110DEGREES INTO THE REACTOR
CONTG. 300-400 ML 35PERCENT HCL TO WHICH 30-40PERCENT H_2O SOLN. OF
I WAS GRADUALLY ADDED. THE RESULTING REACTION MIXT. WAS EVAPD. TO 200
ML AND COOLED TO GIVE 2,2,3,3,TETRACHLORO,1,4,BUTANEDIOL (II), M.
256DEGREES (H_2O), AND MUCOCHLORIC ACID (III), M. 127DEGREES (H_2
O) AS THE MAIN PRODUCTS. THE COURSE OF THE CHLORINATION WAS AFFECTED BY
THE TEMP. AT 20-30DEGREES II WAS OBTAINED IN 29-52PERCENT YIELD AND
LITTLE OR NO III RESULTED. AT 72DEGREES A MIXT. OF BOTH PRODUCTS WAS
OBTAINED IN WHICH III (25-55PERCENT) PREDOMINATED OVER II (8-19PERCENT).
AT 110DEGREES AN OIL CONTG. TRICHLOROBUTANETRIOL AND SIMILAR COMPDS.
WAS OBTAINED. INCREASING CL-I MOLAR RATIO (6-18) AT 72DEGREES CAUSED AN
INCREASE IN THE YIELDS BUT DID NOT AFFECT THE II-III RATIO WHICH ALSO
WAS NOT MUCH CHANGED EITHER BY VARYING THE RATIO OF I TO SOLVETN (6-29
G-KG SOLVENT PER HR) OR EXTENDING THE REACTION TIME TO 20 HR
DEMONSTRATING THE STABILITY OF BOTH PRODUCTS UNDER REACTION CONDITIONS.
INCREASED YIELDS OF III AT ELEVATED TEMP. INDICATED THAT THE EQUIL.
REACTION OF CL WITH H_2O TO HCL AND HOCL REPRESENTED THE STEP WHICH
CONTROLLED THE COURSE OF CHLORINATION. THE COMPLEX FORMATION BETWEEN I
OR 2,3,DICHLORO,2,BUTENE,1,4,DICL AND CL IN H_2O SIMILARLY TO THE
REACTION OF OLEFINS WITH CL IN H_2O WAS EITHER NOT OBSD. OR
REPRESENTED A SECONDARY PROCESS.

                         UNCLASSIFIED

USSR

UDC 539.3:534.1

AMENZADE, R. Yu., BUBUTEYSHVILI, O. L.

"Buckling of a thin Eccentric Ring Made of a Nonlinear Material Considering the Load. Plane Contact Problems"

V sb. Tezisy dokl. Nauch. konf.. posvyashchen. 50-letiyu obrazovaniya SSSR. Azerb. un-t (Topics of Papers. Scientific Conference associated with the 50th Anniversary of Education in the USSR. Azerbayzhan University -- Collection of Works), Yerevan, 1972, pp 170-171 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V356)

Translation: The problem of the depression of a thin eccentric ring is considered where the material is subject to a nonlinear elasticity law in the form

$$\varepsilon = \sigma/E[1 + (\sigma/\sigma_0)^2].$$

The effect of pressure relief is taken into account. The resulting system of nonlinear ordinary differential equations of the Cauchy problem is integrated numerically. The effect of pressure relief is small. The problem of depression of a rigid stamp into an elastic half-plane with an arbitrarily

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CIRC AC APPROVED FOR RELEASE: 08/09/2001   CIA-RDP86-00513R002200510006-5"
ABSTRACT/EXTRACT--THE REACTION SCHEME FOR THE OXIDATIVE CHLORINATION
WAS PROPOSED.   FACILITY: VSES, NAUCH.-ISSLED. INST. KHIM.
SREDSTV ZASHCH. RAST., MOSCOW, USSR.

USSR

AMENZADE, R. Yu., BUBUTEYSHVILI, O. L., Tezisy dokl. Nauch. konf., posvyash-chen. 50-letiyu obrazovaniya SSSR. Azerb. un-t, Yerevan, 1972, pp 170-171

located elliptical opening is examined. The absence of slippage at the points of contact is assumed. Also investigated is the problem under the condition of free sliding at the points of contact of a rigid stamp and an elastic half-plane. O. I. Terebushko.

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USSR

UDC 539.3.01

BUBUTEYSHVILI, O. L.

"Impression of a Rigid Stamp Into a Half-Plane Weakened by an Elliptical Opening"

Uch. zap. Azerb. in-t nefti i khimii (Scientific Notes of Azerbayzhan Institute of Oil and Chemistry), 1972, Series 9, No. 4, pp 50-56 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V48)

Translation: The plane contact problem of the theory of elasticity of a smooth contact of a stamp with a half-plane with an elliptical opening is discussed. The Kolosov-Muskhelishvili complex potential apparatus is used for the mathematical formulation of the problem. A suitable choice of expansions for the complex potentials was used to reduce the problem to two infinite systems relative to the coefficients of these expansions. A numerical example of the method is not given. G. Ya. Popov.

A N 0024463⁻

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UR 9021

AUTHOR-- BUBYAKIN, D., CORRESPONDENT

TITLE-- AN INSTITUTE OF NORTHERN STUDIES

NEWSPAPER-- SOVETSKAYA MOLDAVIYA, FEBRUARY 19, 1970, P 1, COL 8

ABSTRACT-- N. V. CHERSKIY, CHAIRMAN OF THE PRESIDIUM OF THE YAKUT AFFILIATE OF THE SIBERIAN BRANCH OF THE ACADEMY OF SCIENCES, CORRESPONDING MEMBER OF THE ACADEMY, REVEALED THAT A DECISION HAS BEEN MADE TO ESTABLISH A RESEARCH INSTITUTE FOR PHYSICAL-TECHNICAL PROBLEMS OF THE NORTH IN YAKUTSK. IT WILL BE THE 17TH RESEARCH INSTITUTION IN YAKUTSK.

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BUBYALIS, YU. S., BYARNOTAS, A. K., KANSHEPEDAS, Z. P., PAPIL'SKIS, I. M., and ESTULIN, I. YA., Institute for Chemistry and Chemical Technology, Academy of Sciences, Latvian SSR

"Process for Preparing the Surface of Aluminum and Aluminum Alloys for the Application of a Galvanized Coat"

Avt. sb. SSSR, kl. (USSR Authors' Certificate kl. [expansion unknown]) C 23 b 5/00, C 23 c 3/00, No 336375, applied 26/01/70, published 19/05/72 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L356P)

Translation: A process is patented for the preparation of the surface of Al and its alloys for galvanization by treating the surface in a solution containing the fluoroborates of zinc and ammonia followed by cathodic treatment in the same solution. The process is distinguished in that nickel fluoroborate is added to the solution, the formation of the Ni-Zn alloy on the surface of the Al providing an increase in the durability of the adhesion of the subsequent galvanic film to the substrate. The reaction proceeds at a temperature of 20-30°C and a current density of 0.5-1.5/decimeter^2 in a solution containing the following (in g/l: $Zn(BF_4)$, 40-80; $Ni(BF_4)_2$, 100-250; NH_4BF_4, 5-40. For example, parts made of Al or one of its alloys are degreased in an organic 1/2

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USSR

EUBYALIS, YU. S., et al., Avt. sb. SSSR, kl (from Referativnyy Zhurnal --
Khimiya, No 7, 1973, Abstract No 7L356P)

solvent and then treated in a solution containing Na_2CO_3 (56 g/l) and Na [sic]
(56 g/l) at 70°C for 5 minutes. Then the parts are treated in a 5% solution of
NaOH at 20°C for 5 minutes. After washing in water the Al parts are treated
for 30-60 seconds dilute (1:1)HNO_3. For parts made of the Al alloy D-16,
however, 30 g/l of NH_4F is added to the HNO_3 solution before treatment. The
parts are washed again with water and treated for 10-60 seconds in a solution --
having pH 3.5-4.5 and a temperature of 20-30°C -- containing the following:
$Zn(BF_4)_2$, 40-8- g/l; $Ni(BF_4)_2$, 100-250 g/l; and NH_4BF_4, 5-40 g/l. After this
the parts are cathodically processed in this same solution for 10-30 seconds
at a current density of 0.5-1.5 amps/decimeter^2 and transferred to a bath for
the application of the galvanizing coat.

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USSR   UDC 669.3/6.476(088.8)

BUBYALIS, Yu. S., SHVIL'PENE, G. P., BYARNOTAS, A. K., and MATULIS, Yu. Yu.,
Institute of Chemistry and Chemical Technology, Academy of Sciences Lithu-
anian SSR

"Method for Electrodeposition of Copper-Tin Alloy"

Translation of Abstract: In order to obtain adherent deposits of alloys, Sn
in the form of Na stannate and KNO_3 are introduced into the electrolyte in
the following ratio of components (in g/liter): Cu pyrophosphate 15-35,
Na stannate 20-35, K pyrophosphate 170-240, KNO_3 5-17. The process is carried
on at pH 10-11, D = 0.8-5 a/dm^2 and temperature 40-60°. The Cu content of
the alloy is 70-95%. The composition of the alloy does not depend on current
density, but current efficiency declines approximately from 100 to 55% with
a rise in D. With a rise in pH of the electrolyte from 10 to 11 and of
temperature from 40 to 60° the Cu content of the alloy drops by ~ 15%.

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USSR

POBEDIMSKIY, D. G., BUCHACHENKO, A.L., KURBATOV, V. A.

"Kinetic Application of Stable Nitroxyl Radicals in Phosphite Reactions. 3. Phosphoranylperoxide Radical"

Abstract: The phenomenon of competition of two acceptors of the primary radicals O_2 and the stable nitroxyl radicals is analyzed, and the kinetic laws of destruction of the stable nitroxyl radicals in the system made up of tertiary butyl hydroperoxide and triethyl phosphite in the presence of O_2 and without it. The radical acceptor (stable nitroxyl radicals) method demonstrated that the phosphoranyl radicals formed in the reaction of the tertiary butyl hydroperoxide with triethyl phosphite in the presence of oxygen are converted into phosphoranylperoxide radicals. The rate constant found for the formation of phosphoranylperoxide radicals at $20°$ is 250 times less than the rate constant of disproportionation of the primary phosphoranyl radicals by the reaction with a stable radical.

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BUCHACHENKO, A. L.

Chemical Science

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CHEMICAL POLARIZATION OF NUCLEI AND ITS ROLE IN THE INVESTIGATION OF MECHANISMS OF CHEMICAL REACTIONS

(Symposium in Belgium)

1/2   029   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--KINETICS OF POLY(ETHYLENE TEREPHTHALATE) CRYSTALLIZATION STUDIED BY
   A PARAMAGNETIC PROBE METHOD -U-
AUTHOR-(03)-KOVARSKIY, A.L., VASSERMAN, A.M., BUCHACHENKO, A.L.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 211-14

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYETHYLENE TEREPHTHALATE, CRYSTALLIZATION, REACTION
   KINETICS, EPR, CALCULATION, ACTIVATION ENERGY, PLASTIC FILM, AMORPHOUS
   POLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0313   STEP NO--UR/0460/70/012/003/0211/0214

CIRC ACCESSION NO--AP0111507
                          UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0111507
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CRYSTN. KINETICS, DETD. BY USE OF
   4,HYDROXY, 2,2,6,6,TETRAMETHYLPIPERIDINOOXY AS THE PARAMAGNETIC PROBE.
   WERE 1ST ORDER FOR AMORPHOUS POLY(ETHYLENE TEREPHTHALATE) (I).   CRYSTN.
   RATES (THE TIME REQUIRED TO REACH THE GLASS TRANSITION) DETD. BY EPR
   WERE COMPARABLE TO THOSE DETD. BY D. CHANGES.   THE CALCD. ACTIVATION
   ENERGIES OF CRYSTN. AND TEMP. RANGES STUDIED FOR UNORIENTED AND ORIENTED
   I WERE 20 PLUS OR MINUS 2 KCAL-MOLE AND 33 PLUS OR MINUS 2 KCAL-MOLE AND
   110-25DEGREES AND 130-40DEGREES, RESP. PRELIMINARY COLD DRAWING
   (20DEGREES, 500PERCENT) OF AMORPHOUS I FILMS DECREASED RATE CONSTS. AND
   INCREASED CRYSTN. ACTIVATION ENERGIES.

UNCLASSIFIED

TITLE--DYNAMIC POLARIZATION OF NUCLEAR SPINS IN A CHEMICAL REACTION -U-

AUTHOR-(03)-BUCHACHENKO, A.L., KESSENIKH, A.V., RYKOV, S.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 3, PP 766-777

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--NUCLEAR SPIN, THERMAL DECOMPOSITION, ORGANIC PEROXIDE, NUCLEAR
MAGNETIC MOMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1976/2065   STEP NO--UR/0056/70/058/003/0766/0777

CIRC ACCESSION NO--AP0043593
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0043593

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLARIZATION PROCESSES OF NUCLEAR
  SPINS IN CHEMICAL REACTIONS OCCURRING IN MAGNETIC FIELDS ARE STUDIED IN
  THE CASE OF THERMAL DECOMPOSITION OF ORGANIC PEROXIDES. THE DYNAMIC
  AMPLIFICATION COEFFICIENT OF NUCLEAR POLARIZATION IS ACCEPTED AS THE
  MAIN QUANTITATIVE CHARACTERISTIC OF THE PROCESS. APPLICATION OF THE
  METHODS OF OBTAINING AND TREATING THE EXPERIMENTAL DATA AND COMPARISON
  OF THE MEASURED QUANTITIES WITH THE RESULTS OF SIMPLE MODEL CALCULATIONS
  AS WELL AS THOSE OF SOME DIRECT EXPERIMENTS INDICATE THAT ORIENTATION OF
  NUCLEAR SPINS IN CHEMICAL REACTION ACTS IS NOT STATIONARY AND THAT
  TRANSITION INVOLVING CHANGES OF ORIENTATION ARE APPARENTLY THE CAUSE OF
  THE POLARIZATION EFFECT OBSERVED. A SIMPLE PHENOMENOLOGICAL THEORY OF
  THE KINETICS OF NUCLEAR MAGNETIC MOMENTS, IN WHICH DYNAMIC POLARIZATION
  OF THE NUCLEAR SPIN IN THE CHEMICAL REACTION IS TAKEN INTO ACCOUNT, IS
  PROPOSED AND CONFIRMED EXPERIMENTALLY. A NEW EXPERIMENTAL METHOD IS
  SUGGESTED AND REALIZED WHICH CONSISTS IN INVERSION OF THE MAGNETIC
  MOMENT DURING THE REACTION. SIMPLE WORKING FORMULAS ARE DERIVED WHICH
  CAN BE EMPLOYED FOR TREATING THE EXPERIMENTAL DATA. POLARIZATION OF
  NUCLEAR SPINS IN THE DECOMPOSITION PRODUCTS OF ORGANIC PEROXIDES IS
  INVESTIGATED AND THE DYNAMIC AMPLIFICATION COEFFICIENTS FOR NUCLEAR
  POLARIZATION, E, ARE MEASURED FOR THE FIRST TIME FOR THERMAL
  DECOMPOSITION REACTIONS. THE PREDICTIONS OF THE ORIGINAL HYPOTHEISIS
  REGARDING CHEMICAL POLARIZATION OF NUCLEI VIA THE NONSTATIONARY
  OVERHAUSER EFFECT ARE ANALYZED IN DETAIL.

                        UNCLASSIFIED

3/3   012
CIRC ACCESSION NU--AP0043593   UNCLASSIFIED   PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--POSSIBLE CONSEQUENCES OF THE ASSUMPTION OF CONSERVATION OF NUCLEAR SPIN ORIENTATION IN CHEMICAL REACTION ACTS ARE CONSIDERED. THEORETICAL LIMITING VALUES OF E UNDER THIS ASSUMPTION ARE OBTAINED. THE DEPENDENCE OF THESE QUANTITIES ON THE CONDITIONS OF THE REACTION IS DISCUSSED. A COMPARISON OF THE MEASURED VALUES OF THE DYNAMIC AMPLIFICATION COEFFICIENT WITH THE THEORETICAL LIMITING VALUES, A STUDY OF THE DEPENDENCE OF THESE QUANTITIES ON VISCOSITY, TEMPERATURE AND CONCENTRATION, AND FINALLY DIRECT EXPERIMENTS ON POLARIZATION IN CHCL SUB3 SHOW THAT THE ASSUMPTION OF CONSERVATION OF NUCLEAR SPIN ORIENTATION IN CHEMICAL REACTIONS IS NOT VALID.

UNCLASSIFIED

UNCLASSIFIED
PROCESSING DATE--04DEC70
TITLE--THEORETICAL INTERPRETATION OF SPIN DENSITY DISTRIBUTION IN SOME
ALKYL RADICALS -U-

AUTHOR-(03)-ABRONIN, I.A., ZHIDOMIROV, G.M., BUCHACHENKO, A.L.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(2), 229-34

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYL RADICAL, MOLECULAR ORBITAL, ELECTRON STRUCTURE, PROTON,
MOLECULAR INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605018/810 STEP NO--UR/0192/70/011/002/0229/0234

CIRC ACCESSION NO--AP0140797
UNCLASSIFIED

CIRC ACCESSION NO--AP0140797   UNCLASSIFIED   PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPIN D. DISTRIBUTION WAS CALCD. FOR A NO. OF CYCLIC AND ACYCLIC ALIPHATIC RADICALS: ET, CYCLOHEXYL, PIPERIDINOOXY, AND BU BY A SIMPLE APPROXN. METHOD OF MO LCAO FOR SIGMA SYSTEMS. THE RADICAL CENTER IN CYCLOHEXYL RADICAL WAS CONFIRMED TO HAVE A PI ELECTRON STRUCTURE. THE AV. VALUES OF THE HYPERFINE INTERACTION CONSTS. ARE INDEPENDENT OF THE INVERSION OF THE CYCLE IN THE CYCLIC RADICALS STUDIED. THE ONE ELECTRON MECHANISM CALCNS. ARE IN AGREEMENT WITH THE OBSD. BASIC PROPERTIES OF THE SPIN D. I.E. THE ANGULAR DEPENDENCE OF THE HYPERFINE INTERACTION CONST., ITS MIN. ON THE GAMMA PROTONS IN THE CYCLIC SYSTEMS, AND MAREDLY LARGE VALUES OF THESE CONSTS. FOR REMOTE PROTONS IN THE SATD. SP PRIME3 SYSTEMS.   FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED
TITLE--INDUCING DYNAMIC NUCLEAR POLARIZATION IN CHEMICAL REACTIONS -U-
PROCESSING DATE--13NOV70

AUTHOR-(03)-RYKOV, S.V., BUCHACHENKO, A.L., KESSENIKH, A.V.

COUNTRY OF INFO--USSR

SOURCE--SPECTROSC. LETT. 1970, 3(2), 55-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--STRONG NUCLEAR INTERACTION, CHEMICAL DECOMPOSITION, BENZOYL
    PEROXIDE, AZO COMPOUND, CARBONATE, ELECTRON INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1985
STEP NO--US/0000/70/003/002/0055/0058
CIRC ACCESSION NO--AP0125574
UNCLASSIFIED

CIRC ACCESSION NO--AP0125574   UNCLASSIFIED   PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DYNAMIC NUCLEAR POLARIZATION OF ME
CONTG. PRODUCTS OF DECOMPN. OF BENZOYL PEROXIDE IN THE PRESENCE OF MEI
(0.1M) WERE DETD. IN C SUB2 CL SUB4 AT 120DEGREES. SIGNS OF THE
POLARIZATION OF THE PRODUCTS AGREE WITH THOSE OBTAINED FOR THE SAME
PRODUCTS ON DECOMPN. OF ME CONTG. PEROXIDES. SIGN OF NUCLEAR
POLARIZATION IS NOT DEPENDENT ON WHETHER RADICALS ARE FORMED AS
INDIVIDUAL SPECIES OR ESCAPE FROM THE RADICAL PAIRS IN CAGES. ON
DECOMPN. OF BICYCLOHEXYL PERCARBONEATES, PERACETYLISOPROPYL CARBONATE,
AND SOME AZO COMPDS., CHCL SUB3 WAS FORMED IN WHICH THE PROTONS WERE
NEG. POLARIZED. NECLEAR POLARIZATION IS INDUCED IN THE EARLY STAGES OF
CHEM. REACTIONS WHEN STRONG ELECTRON ELECTRON AND ELECTRON NUCLEAR
INTERACTIONS EXIST AND WHEN RECONSTRUCTION OF ELECTRONIC CLOUDS OF
INTERFACING MOLS. TAKES PLACE.   FACILITY: INST. CHEM. PHYS.,
MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.5.091

BUCHATSKAYA, G.B.

"Results Of Measurements Of Doppler Spectrum Of Signal Radiated By An Earth Satellite"

Elektrosvyaz', Moscow, No 11, Nov 72, pp 36-38

Abstract: A method based on the Doppler effect is considered for studying the propagation condition of short waves with the aid of signals radiated by an earth satellite. The apparatus and the methodology of the measurements of the radiated signals are discussed. The experiments were conducted in Moscow rayon in June 1970. It is concluded that the preliminary summary presented of the results of the experiment has a qualitative character. It is noted that by and large the most pronounced regularities are not exhaustive of all the varied phenomena which were observed. However, they also make it possible to draw conclusions concerning the necessity for considering a three-dimensional model of a channel during analysis of the conditions of radiowave propagation, taking into account both the change of electron concentration along the path of radiowave propagation and the character of the reflecting surface of the earth. 4 fig. 2 ref. Received by editors, 23 February 1972.

1/1

Therapy

USSR

UDC 616.981.551-085.373.39-039.71-039.11

BYCHENKO, B. D., and MATVEYEV, K. I., Institute of Epidemiology and Micro-biology imeni Gamaleya and State Control Institute imeni Tarasevich

"Emergency Prevention of Tetanus by Revaccination With Toxoid"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 88-91

Abstract: Study of the efficacy of revaccination with tetanus toxoid of 231 persons who had been immunized against tetanus 1 to 3 years before revealed that the distribution of antitoxin titers was close to normal. After revaccination most of the persons quickly produced a sufficient quantity of antitoxin. About 15% of patients were capable of producing a large quantity of antitoxin, whereas 6.5% were immunologically inert. Almost 3.9% of those revaccinated did not have a protective titer of the antitoxin 10 to 15 days after receiving the toxoid. It was concluded that in order to guarantee the efficacy of emergency revaccination, one must check the dynamics of change in antitoxin titers after revaccination, for in the absence of such check, revaccination may be useless (as in the 3.9% of the cases mentioned above). The check should be made on the 6th day after revaccination in persons with extensive wounds contaminated by soil
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USSR

BYCHENKO, B. D., and MATVEYEV, K. I., Zhurnal Mikrobiologii, Epidemiologii
i Immunobiologii, No 9, 1971, pp 88-91

or clothing. If they lack a protective titer (0.01 IU/ml, tetanus antitoxin
(5,000 to 10,000 IU/ml) or donor antitetanus gamma globulin (900 to 1500 IU)
should be promptly administered.

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1/2   029   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--DEVELOPMENT OF ACTIVE IMMUNITY IN PERSONS AFTER AN ACTIVE PASSIVE
  PROPHYLAXIS OF TETANUS -U-
AUTHOR-(05)-MATVEYEV, K.I., BYCHENKO, B.D., PETROV, P.N., KASPAROVA,
  YE.M., TRUNOVA, Z.N.
COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5,
  PP 26-32
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACTIVE IMMUNITY, PROPHYLAXIS, TETANUS, TETANUS TOXOID,
  VACCINATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0103   STEP NO--UR/0016/70/000/005/0026/0032

CIRC ACCESSION NO--AP0114499
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0114499
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. OF 39 INJURED PERSONS WHO WERE NOT
   SUBJECTED FORMERLY TO IMMUNIZATION AGAINST TETANUS 45PERCENT IN 3
   MONTHS, AND 73PERCENT IN 12 MONTHS, AFTER AN URGENT ACTIVE PASSIVE
   PROPHYLAXIS (TOXOID PLUS SERUM), WERE PREPARED TO REVACCINATION WITH
   TOXOID AND REQUIRED NO ADMINISTRATION OF TETANUS ANTISERUM IN REPEATED
   TRAUMAS. AMONG HEALTHY PERSONS GIVEN A SINGLE INJECTION OF TETANUS
   TOXOID IN A DOSE OF 20 BU (50 PERSONS), 84PERCENT IN 3 MONTHS, AND
   100PERCENT IN 8-12 MONTHS WERE PREPARED TO REVACCINATION WITH THE USUAL
   DOSE OF THE TOXOID (10 BU). THIS POINTED TO THE POSSIBILITY OF WIDE
   SINGLE IMMUNIZATION OF ADULT POPULATION WITH SUBSEQUENT REVACCINATION IN
   8 TO 12 MONTHS. ANTITOXIC TETANUS ANTISERUM (3,000 IU) INJECTED
   TOGETHER WITH THE TOXOID (20 BU) PRODUCED SOME DEPRESSIVE EFFECT ON THE
   DEVELOPMENT OF ACTIVE IMMUNITY IN FORMERLY NON IMMUNIZED PERSONS.
   PERSONS IMMUNIZED AGAINST TETANUS IN WHOM THE ANTITOXIN TITRE WAS 0.001
   IU-ML, EVEN AFTER SEVERE TRAUMAS PRODUCED THE ANTITOXIN RAPIDLY IN
   RESPONSE TO THE ADMINISTRATION OF THE TOXIN TOGETHER WITH THE SERUM.
      FACILITY: INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII IM. GAMALEI AND
   INSTITUT IM. SKLIFOSOVSKOGO, MOSCOW.

UNCLASSIFIED

TITLE--THE PROTECTIVE DOSE OF ANTITOXIN IN EXPERIMENTAL TETANUS -U-

AUTHOR-(02)-BYCHENKO, B.D., MATVEYEV, K.I.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,
  NR 6, PP 72-74
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CLOSTRIDIUM TETANI, TETANUS TOXOID, ANTITOXIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0194   STEP NO--UR/0219/70/049/006/0072/0074

CIRC ACCESSION NO--AP0130953
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0130953

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON A MODEL OF EXPERIMENTAL TETANUS
IN A GUINEA PIG INDUCED WITH A SUSPENSION OF CL. TETANI SPORES THE
AUTHORS ESTABLISHED THAT THE PROTECTIVE DOSE OF ANTITOXIN WHICH
GUARRANTEES PREVENTION OF THE DISEASE SHOULD BE ABOVE 1 IU PER GRAM OF
ANIMAL WEIGHT. AN ANTITOXIN DOSE OF 0.1 IU PER GRAM OF WEIGHT PROTECTED
APPROXIMATELY 50PERCENT OF GUINEA PIGS FROM EXPERIMENTAL INFECTION.
ANTITOXIN INJECTED ONE HOUR AFTER INFECTION PROTECTED THE ANIMALS FROM
TETANUS BETTER THAN ANTITOXIN INTRODUCED SIX HOURS AFTER INFECTION.
FACILITY: N. F. GAMALEYA INSTITUTE OF EPIDEMIOLOGY AND MICROBIOLOGY
OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

1/2   013   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--OSCILLOPOLAROGRAPHIC DETERMINATION OF THE PRECIPITATION PH AND THE
   ACTIVITY PRODUCT OF PRASEODYMIUM AND EUROPIUM HYDROXIDES -U-
AUTHOR-(04)-BUCHENKO, L.I., KOVALENKO, P.N., TSYGANKOV, YE.M.,
   YEVSTIFEYEV, M.M.
COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(2) 358-61

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOBAR, HYDROGEN ION CONCENTRATION, HYDROXIDE, EUROPIUM
   COMPOUND, PRASEODYMIUM COMPOUND, HYDROXIDE, POLAROGRAPHIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/0906   STEP NO--UR/0078/70/015/002/0358/0361

CIRC ACCESSION NO--AP0053830
                        UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0053830

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMATION OF EU AND PR HYDROXIDES WAS CONFIRMED BY OSCILLOPOLAROGRAPHY. THE HYDROXIDES FORMED AT PH 5.6 AND 6, RESP. AND THEIR ISOBARIC POTENTIAL OF DISSOCN. IS 34 AND 31.5 KCAL-MOLE, RESP.

UNCLASSIFIED

USSR   UDC: 681.327.12

NOVANKEVICH, Ye. V., BUCHIK, M. I., Central Scientific Research Laboratory

"A Device for Graphic Data Input Into Analog Computers"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 29, 1970, Soviet Patent No 281906, Class 42, filed 7 Oct 66, p 133

Abstract: This Author's Certificate introduces a device for graphic data
input into analog computers. The device contains a trigger pulse oscillator
connected to a thyratron pulse shaper-distributer. Connected to the outputs
of the shaper-distributer are linear potentiometers which are connected
through operational amplifiers and keys to summing amplifiers. As a dis-
tinguishing feature of the patent, the functional possibilities of the device
are extended by connecting the linear potentiometers in a pot array which is
in contact with jumpers fastened to the reverse side of the graphic input
medium.

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USSR

UDC: 542.61

LASKORIN, B. N., BUCHIKHIN, V. P., FEDOROVA, L. A.

"Investigation of the Behavior of Organophosphorus Acids in Aqueous and Nonaqueous Media"

Leningrad, Radiokhimiya, Vol 14, No 3, 1972, pp 356-366

Abstract: The method of potentiometric titration was used to determine the dissociation constants of a number of dialkylphosphoric, phosphonic and phosphinic acids in water, 75% ethyl ethanol and acetone. A linear relation was established between the sum of the induction constants of substituents and the logarithms of the constants of acid dissociation of the investigated organophosphorus acids in these solvents. The induction constants of long-chain alkyl and alkoxyl radicals were calculated. The method of distribution was used to determine the constants of distribution and dimerization of the homologous series of dialkylphosphoric and phosphinic acids for the benzene-water system. It was found that there is a linear relation between the values of $\log K_d$ of organophosphorus acids and the total number of carbon atoms ($\sum C$) in their molecules ($\sum C \leq 16$). An empirical method of characteristics is proposed for the distribution of organophosphorus acids between the organic and aqueous phases, utilizing distribution parameters which characterize the

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USSR

LASKORIN, B. N., et al., Radiokhimiya, Vol 14, No 3, 1972, pp 356-366

change in free energy of the distribution process with a change in the struc-
ture of the radical. The paper presents a graph of the constants of dimeriza-
tion of dialkyl phosphoric and phosphinic acids as functions of the number of
carbon atoms in the molecules of these compounds.

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- 3° -

USSR   UDC 547.241:541.65

LASKORIN, B. N., YAKSHIN, V. V., BUCHIKHIN, Ye. P., SOKAL'SKAYA,
L. I., and MEDVEDEV, V. I., Institute of Geophysics imeni O. Yu.
Shmidt, Academy of Sciences USSR, Moscow

"The Donor Capacity of Neutral Organophosphorus Compounds of the
Type $X_3P=O$"

Abstract: The donor capacity in complex-formation of neutral
organophosphorus compounds of the type $X_3P=O$ (esters, ester amides
and amides of P-acids) was studied on the basis of the basicity
constants pK_a determined by potentiometric titration with $HClO_4$
in nitromethane, the displacement $\Delta \nu_{OH}$ of the frequency of
valency vibrations in IR spectra of complexes with phenol and the
enthalpy of formation of these complexes, the displacement of the
absorption band by iodine $\Delta \lambda_{max}$ upon formation of complexes with
iodine in CCl_4, and the stability constants $\tilde{K}_{HNO_3}$ of complexes

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USSR

LASKORIN, B. N., et al., Teoreticheskaya i Eksperimental'naya Khimiya, Vol 9, No 2, Mar-Apr 73, pp 245-250

with HNO_3. The compounds studied, which included $R_3P=O$, $R_2P(O)OR'$, $RP(O)(OR')_2$, $(R'O)_3P=O$, $R_2P(O)NHR'$, $RO(O)(NHR')_2$, $(R'NH)_3P=O$, $(RO)_2P(O)NHR'$, and $ROP(O)(NHR')_2$, where R, R' were normal alkyls C_4-C_{10}, were obtained by reacting P acid chlorides with alcohols and amines. The introduction of alkylamide groups increased the donor capacity of the phosphoryl group as a result of the $P_\pi - d_\pi$ conjugation of the unshared electron pair of N with the vacant 3d - orbitals of P. The magnitude of this interaction was not constant, but varied with the symmetry type of the molecule, the effective positive charge at P, and the competing mesomeric capacity of the substituents at P and their volumes.

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USSR

UDC 621.791

GEYNISH, Z. V., KALININ, B. P., DENISOV, A. V., BUCHINSKIY, V. N., Engineers, and POTAP'YEVSKIY, A. G., Candidate of Technical Sciences

"The Use of Expendable-Electrode Argon Pulsed-Arc Welding for the Fabrication of Chemical Equipment"

Abstract: VNIIPTkhimnefteapparatury [All-Union Scientific Research, Planning and Technological Institute of Chemical and Petroleum Equipment] has developed a technique for the consumable-electrode argon pulsed-arc welding of stainless-steel angle, T and lap joints for the fabrication of parts and components for column-type apparatuses (trays, spouts, boxes etc.). The use of pulsed-arc welding makes it possible to raise labor productivity, improve product quality and appearance, and reduce product deformation. Pulsed-arc welding with 06Kh19N9T and 07Kh25N13 wires assures high mechanical weld-joint properties. Such joints are not susceptible to cracking or intercrystalline corrosion. The weld seams have the usual austenitic-ferritic structure. The technique makes it possible to weld not only austenitic steels, but also semiferritic steels, for example 0Kh13. The developed welding technique has been introduced
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USSR

GEYNISH, Z. V., et al., Khimicheskoye i Neftyanoye Mashinostroyeniye, No 10, Oct 72, p 24

at the Chernovitskiy Machine-Building Plant for the fabrication of stainless-steel parts and components for column-type apparatuses, resulting in an annual economic effect of about 17,000 rubles.

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